REMARKS

Claims 1-7 are pending in this application. The claims have been restricted into Group I, Claims 1-5, drawn to process scheduling, and Group II, Claims 6-7, drawn to fault handling. Applicants confirm the provisional election of the Group I claims. Claims 6-7 are cancelled from the present application without prejudice to applicants.

New drawings have been required for Figures 1A, 1B, and 2A-D to add the designation of "Prior Art" since the drawings depict the performance of prior approaches to provide process scheduling for parallel computer systems. New drawings are attached hereto.

The Examiner has objected to the specification for reasons set out by the Examiner. New paragraphs are set out above to correct the noted areas.

Claims 1-5 have been rejected under 35 USC 112, second paragraph, for reasons set out by the Examiner. Antecedent bases have been provided for the terms noted. In addition, applicants have amended Claims 2 and 3 to better specify the relationship between the descriptors and control information to overcome the Examiner's remarks.

Claims 1-3 have been rejected under 35 USC 103(a) as being unpatentable over Damani et al. Applicants respectfully traverse the rejection on the grounds presented by the Examiner.

1. Damani et al. do not teach a "method for scheduling processor jobs on a network of parallel machine processors." Damani et al. teach a "fault-tolerant message-passing system and method . . . ." (Col. 2, lines 6-7).

2. Damani et al. do not teach "accumulating in buffers control information communications generated by each process performed by each processor during a defined time interval." Damani et al. teach "saving in storage the state of the process sufficient to re-start execution of the process." (Col. 2, lines 16-17).

3. Damani et al. do not teach "performing a global exchange of the control information communications at the end of each defined time interval . . . ." Damani et al. teach periodically broadcasting "a logging progress notification to let other processes know which of its state intervals have become stable in which the state interval is recreatable from information saved in stable storage." (Col. 2, lines 21-24).

4. Applicants agree that Damani et al. do not teach that each processor is informed of the number of incoming jobs to be received by each processor in a subsequent time interval. The Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made "to have recognized that communications between processes in a parallel processing system would include the exchange of various types of processor information." However, this generic recognition by persons of ordinary skill in the art does not make obvious applicants' recited claim limitation that "each processor is informed of the number of incoming communications to be received in the succeeding time interval." The statement by the Examiner does not recognize that the communication includes a "number of incoming communications" or a timing for the communications as before "the succeeding time interval."

A primary difference between Damani et al. and applicants' claimed invention is that Damani et al. save information <u>received</u> by a process:

> A message log is retained by the fault-tolerance system 5 for storing information on messages that are received by each process, such as the copy of the contents of each message and information on the order in which each message was processed by the application system.
> Col. 4, lines 66-67; Col. 5, lines 1-3.

Applicants' invention is directed to accumulating information "generated by each process performed by each processor" and performing "a global exchange of the control information communications" to inform all other processors of incoming jobs. By providing the global exchange during a strobe interval, processors are able to maximize their continuous processing and schedule in advance other jobs that are expected to be sent to the processor. There is simply no teaching in Damani et al. about scheduling processor jobs and the Examiner has provided no reference on this teaching.

5. Applicants further agree that Damani et al. do not teach issuing a download command to each processor at the beginning of a strobe interval and scheduling by each processor kernel of communications accumulated prior to the strobe interval to be delivered in the succeeding time interval. Applicants traverse, however, the statement by the Examiner that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Damani et al. system "to poll each processor at the end of a checkpoint (or beginning of another

checkpoint) rather than polling periodically to create a more efficient and systematic design." In the first instance, this statement has no relevance to applicants' claimed invention. In the claims recited by applicants, processors do not "poll" other processors, but, rather, broadcast ("performing a global exchange") information to other processors. It should also be noted that a "checkpoint" as used by Damani et al. is not a time or a time interval, but rather an accumulation of state information to be used in restarting a failed processor: "During normal execution, each process periodically saves its state on stable storage as a checkpoint." (Col. 1, lines 26-28).

Claims 2, 4, and 5 are rejected under 35 USC 103(a) as unpatentable over Damani et al. in view of Song et al. Applicants respectfully traverse the application of Damani et al. to applicants' claimed invention for the reasons stated above. The Examiner further fails to present any motivation for combining Damani et al. and Song et al.: Damani et al. teach recovery of system operation after the occurrence of execution failure; Song et al. teach an efficient process for halting system program operation, switching to a subsequent program, and then returning to the program that was switched out. The statement that "they both teach the execution of plurality of processes and achieving parallel processing" is simply a statement of the field of use of the claimed inventions and not a motivation for combining the teachings in any manner relevant to applicants' claimed invention.

Applicants respectfully assert that Claims 1-5, as modified, are in condition for allowance. The Examiner is requested to allow Claims 1-5 and to pass this case to issue.

Applicants' attorney would be pleased to discuss any of the issues in this case with the Examiner if the Examiner considers such a discussion would assist in placing the case in condition for allowance.

Respectfully submitted,

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